AUTHORS: Starodubov, K. F., Tylkin, M. A. SOV/163-58-3-40/49

TITLE: The Effect of the Hardening Temperature on the Change of the Properties of Steels in Tempering (Vliyaniye temperatury zakalki na izmeneniye svoystv stali pri otpuske)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 242-244 (USSR)

ABSTRACT: The effect of the hardening temperature on the change of the properties of the steel in tempering was investigated. A steel sample of the type U12A with 1,12% C was used for this investigation.
The results of the mechanical investigations and the determination of the coercive force of the steel hardened at temperatures below 650° were compared to the results obtained with steel samples hardened above 920°. In samples hardened at temperatures above 920° C in the curve of the coercive force a minimum may be found. In steel samples hardened below 650°C, i.e. in samples in which there do not occur a separation of the carbide phases from the α-solution and a destruction of the α-phase neither a decrease of the plastic properties nor an increase of the coercive forces was found.

Card 1/2

SOV/163-58-3-40/49

The Effect of the Hardening Temperature on the Change of the Properties of Steels in Tempering

The results obtained agree with the present concepts on the causes of the decrease of the plastic properties and the increase of the coercive force.
There are 1 figure and 5 references, which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: October 1, 1957

Card 2/2

AUTHORS: Staredubov K. F., Tylkin, M. A. SOV/163-58-3-41/49

TITLE: The Effect of a Low Temperature Cooling of Steels Prior to Hardening on the Change of the Mechanical Properties of the Steel at an "Average" Tempering (Vliyaniye glubokogo okhlazhdeniya stali posle zakalki na izmeneniye yeye mekhanicheskikh svoystv pri "srednem" otpuske)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 245-247 (USSR)

ABSTRACT: The effect of the residual austenite and the additional stresses on the change of the properties of hardened steels in tempering was investigated within the temperature range of 350-650°; besides, a lower cooling of the steel sample U12A with 1,12% C was carried out.
The change of the mechanical and physical properties was proved by means of the determination of the hardness and the coercive force.
The change of the hardness, the impact viscosity and the coercive force of the samples in the tempering after hardening was investigated.
Card 1/2 The figures 1, 2, 3 and 4 show that on the curves of the specific

The Effect of a Low Temperature Cooling of Steels Prior to Hardening on the Change of the Mechanical Properties of the Steel at an "Average" Tempering

hardness the impact viscosity has a minimum, whereas a maximum is formed on the curve of the coercive force.
In the cooling of the steel samples in liquid oxygen an insignificant increase of the strength as well as a corresponding decrease of the plastic properties of the impact viscosity occurs. After the thermal treatment of the steel samples the absolute values of the strength, the plastic properties and the impact viscosity differ only little.
The great deformation in the crystal lattice of the steel sample in the cooling in liquid oxygen also influences the diffusion processes. The insignificant change of the plastic properties in deeper cooling as compared to the tempering immediately after hardening is explained by the increase of stresses in the steel sample.
There are 4 figures and 3 references, which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: October 1, 1957

18(7)
AUTHORS: Starodubov, K. F., Tylkin, M. A. SOV/163-58-4-41/47

TITLE: Change in the Properties of Normalized Steel in Tempering (Izmeneniye svoystv normalizovannoy stali pri otpuske)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4, pp 232-235 (USSR)

ABSTRACT: The influence of tempering temperature on the properties of normalized steel was investigated here. These properties are compared with those obtained after quenching and tempering. A Bessemer rail steel of two melts was investigated (0.58 - 0.60% C, 0.87 - 0.93% Mn). The experiments showed that in rail steel air-cooled from a temperature above A_3 the effect of reduction of plastic properties, which is present at the tempering of a hardened steel, is missing. In this case, the properties change monotonously at all tempering temperatures investigated. Tempering of the normalized steel reduces its properties very slightly. Due to the normalization, lamellar textures of the perlite type are immediately formed. The structural state of the normalized steel remains almost unchanged in tempering. Elongation tests show that the

Card 1/2

Change in the Properties of Normalized Steel in Tempering SOV/163-58-4-41/47

stretching - even after tempering at 550-575° - is much greater in a previously normalized steel than in a previously hardened steel. There are 4 figures and 3 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Institute of Metallurgy)

SUBMITTED: October 1, 1957

Card 2/2

25(1) SOV/135-59-5-10/21

AUTHORS: Tylkin, M.A., Candidate of Technical Sciences; Sivak, V.M., Engineer; Parfent'yev, I.F., Engineer; Kropp, M.A., Engineer

TITLE: The Restoration of Crane Wheels by Building-Up

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 5, pp 25-27 (USSR)

ABSTRACT: To restore worn crane wheels, the Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo (Dneprovskiy Metallurgical Plant imeni Dzerzhinskiy) has planned and put into operation a special unit for automatically building up under flux, and developed a technological process for restoring and strengthening crane wheels of up to 1200 mm diameter. It consists of a machine for fastening and rotating the crane wheel, an A384 welding head designed by the Institut elektrosvarki im. Ye.O.Patona AN USSR (Institute of Electric Welding imeni Ye.O.Paton of the AS UkrSSR), mechanisms for the longitudinal feed and raising of the welding head, a device for screening and feeding the flux into the hopper and an aspirator. The unit is provided with a girder crane, and its main layout is described and illustrated in Figure 1. It is fed by a/c from two STN-500 welding transformers connected in parallel. Figure 2 shows

Card 1/3

The Restoration of Crane Wheels by Building-Up

the wheel being welded on the unit. The used flux and waste (slack) pass into a special device where they are filtered and returned to the head hopper. This process is described and illustrated in Figure 3. The building-up is carried out by an electrode wire made of St. 6 steel of 5 mm diameter (for large or badly-worn wheels) or 30KhGSA steel of 3.5 mm diameter (for wheels less than 700 mm in diameter in which the height of the built-up layer is less than 6 mm). Operational experience with the unit at the plant has shown that the following procedure must be observed; 1) when the electrode made of 5 mm St.6 steel is used, the speed of the feed of the electrode wire is taken as equal to 43-49 meters per hour at a peripheral speed of the article of 32-38 meters per hour, the current being 650-700 amps and 28-36 volts; 2) When an electrode wire made of 3.5 mm 30KhGSA steel is used, its feed speed is taken as equal to 56-64 meters per hour at a peripheral speed of the article of 40-48 meters per hour, the current being 450-500 amps and 28-36 volts. De-

Card 2/3 tails of the chemical composition of the welded wheels are

The Restoration of Crane Wheels by Building-Up

then given, to show that they can be subjected to thermal treatment - sorbitization. The plant imeni Dzerzhinskiy has devised a special process for doing this. It consists of heating the wheel to 840°, plunging it into a hardening bath, tempering it and boring the axle hole. There are 2 diagrams and 1 photo.

ASSOCIATION: Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo (Dneprovskiy Metallurgical Plant imeni Dzerzhinskiy)

TYLKIN, M.A.; ZASPITSKIY, N.A.; MEL'NICHENKO, G.P.

Investigating the heat resistance of charging bars in service conditions. Izv. vys. ucheb. zav.; chern. met. 7 no.9:155-159'64. (MIRA 17:6)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Metallurgicheskiy zavod im. Dzerzhinskogo.

25(1) SOV/135-59-5-14/21

AUTHOR: Tylkin, M.A., Candidate of Technical Sciences

TITLE: The Arc Hardsurfacing With Hard Alloys of Parts Subjected to Abrasive Wear

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 5, pp 35-36 (USSR)

ABSTRACT: The materials used for the manual electric-arc hardsurfacing of parts of equipment subject to abrasive wear at the Zavod im. Dzerzhinskogo (Plant imeni Dzerzhinskiy) and other metallurgical concerns, include the hard alloys stalinite and sormite and T-590 and T-620 electrodes. Examples are given of cases where this process has greatly increased the service period of parts of equipment used in the fields of metallurgy and mining. Take the case of the blades of the drum of the pug-mill of a sintering factory; these consisted of sheets 200 x 115 x 20 mm and had a poor durability. Building them up with a surface of stalinite 3 mm deep doubled their life. However, at the present time the blades are subjected to a more complex processing with special devices, as follows. The worn blade is placed in a copper mold (Fig-

Card 1/3

The Arc Hardsurfacing With Hard Alloys of Parts Subjected to Abrasive Wear

ure 2) leaving a gap between the mold and the face of the blade which is filled with a charge of stalinite (Figure 3). The charge is smelted by an electric arc and then the blade is turned to be treated on the other side. The restoration process is carried out with a current of not less than 400 amps and an electrode with a diameter of 6 mm. Its advantages are as follows: 1) The blade gets a correct shape because the worn metal is built up by the charge of hard alloy and the metal electrode; 2) the restoration is effected not by welding on ordinary steel but by the fusing of the stalinite, as a result of which the metal of the restored layer is alloyed by considerable quantities of chrome, manganese, silicon and carbon which continue to resist abrasion after the stalinite layer has worn off; 3) the use of the molds saves time. Recently tests were made at the plant in the experimental welding of alloys on a boron base developed by the Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (All-Union Scientific Research Institute for Hard Alloys). The tests showed that sinter-cutting knives built up with the

The Arc Hardsurfacing With Hard Alloys of Parts Subjected to Abrasive Wear

boride welding mixture removed 121,751 tons of sinter from the belt before being replaced, while those built up with stalinite only managed 71,770 tons. It is finally mentioned that automatic arc hardsurfacing with sormite of parts of charging devices began in 1958 with the use of PP-3Kh2V8 powder electrode wire and AN-20 flux. There are 3 diagrams.

ASSOCIATION: Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo (Dneprovskiy Metallurgical Plant imeni Dzerzhinskiy)

18(5) SOV/125-59-9-12/16

AUTHOR: Tylkin, M.A., Candidate of Technical Sciences, and Sivak V.I., Parfent'yev,I.F., and Kropp, M.A., Engineers

TITLE: Automatic Surfacing on Vertical Mill of Blast Furnace Charger Big Cone

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 9, pp 88-93 (USSR)

ABSTRACT: Experience of many a metallurgical plant has shown that the efficiency of blast furnaces depends to a large degree on the operation of the charger. It has been on many occasions noted that at the place where the big cone is connected to the furnace head, blowing-off of gases begins to appear after a few months of work; as a result, the cone goes prematurely out of service. In order to prolong its life, it was recommended to reinforce its working surface by hard steel alloys. In Fig 1, a big cone surfaced with alloy Sormayt Nr 1, 140 mm in the width and 2.5 mm deep, is shown; this cone was used in the course of a year on a blast

Card 1/3

Automatic Surfacing on Vertical Mill of Blast Furnace Charger Pig Cone

furnace at the Dneprovskiy Metallurgical Works, working under an increased gas pressure of 0.8 atm. The Institute of Electric Welding imeni Ye.O.Paton has worked out the method of automatic surfacing of the big cone by using PP-Kh10V14 and PP-Kh12V1F electrode wire. The Magnitogorsk Metallurgical Combine has, in its turn, constructed for this purpose a vertical mill (Fig 4). The process of surfacing is shown in Fig 5. The current intensity is 400-600 amp. depending on the zone of the cone to be surfaced; arc tension is 30-36 volts. Before the surfacing process begins, the cone is pre-heated to 400°C; to this end, a special design burner (Fig 6) working on coke gas has been constructed. There are 1 diagram and 5 photographs.

ASSOCIATION: Dneprovskiy metallurgicheskiy zavod imeni Dzerzhinskogo (Dneprovskiy Metallurgical Works imeni Dzerzhinskiy)

18.5000

75574
SOV/130-59-10-6/20

AUTHORS: Tylkin, M. A. (Candidate of Technical Sciences), Sivak, V. I., Parfent'yev, I. F., Kropp, M. A. (Engineers)

TITLE: New Design of Hot Blast Valve

PERIODICAL: Metallurg, 1959, , Nr 10, pp 10-11 (USSR)

ABSTRACT: Hot blast valves with cast bronze rings and bronze gates are used at Plant imeni Dzerzhinskiy (zavod imeni Dzerzhinskogo). The welded gate consists of a basic furodit (iron alloy with approximately 27 to 29% Cr and 5% Al) ring. Better results were achieved with chamotte rings made of wet pressed segments. The segments are fired and assembled in a ring-like manner in chamotte binding medium. The ring is ground along the periphery and side faces. After removal of the surface layer at the joint, no pores are observed. The segments are enclosed by a regular St3-steel tire as shown in Fig. 3.

Card 1/3

New Design of Hot Blast Valve

75574
SOV/130-59-10-6/20

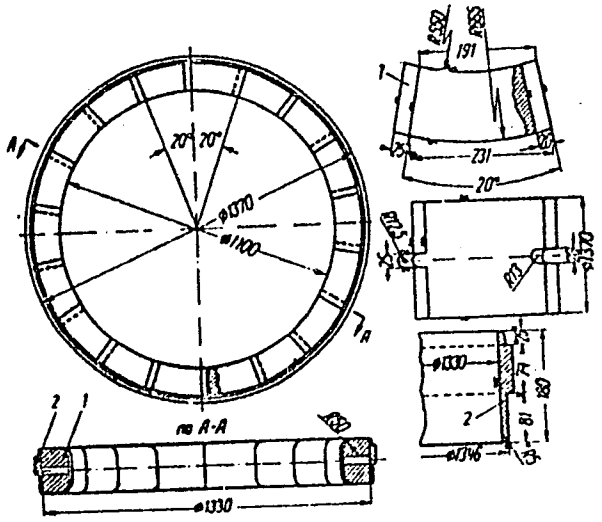


Fig. 3. Chamotte Ring: (1) segment: (2) tire.

Card 2/3

New Design of Hot Blast Valve

75574
SOV/130-59-10-6/20

Loosening of the ring — tire contact is not detrimental since it widens the air gap between ring and tire, decreasing heat transmission from the ring to the tire. Such rings are installed in a blast furnace of the plant. There are 3 figures.

ASSOCIATION: Plant imeni Dzerzhinskiy (Zavod imeni Dzerzhinskogo)

Card 3/3

TYLKIN, M.A., kand. tekhn. nauk

Heat treatment of pneumatic chisels and spears. Mashinostroitel' no.10:25 O '59. (MIRA 13:2)
(Steel--Heat treatment)

SOV/135-59-10-16/23

25(1)

AUTHORS: Tylkin, M.A., Candidate of Technical Sciences, and Sivak, V.I., Engineer

TITLE: Automatic Hard Facing and Reinforcing of Shafts

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 10, pp 37-39 (USSR)

ABSTRACT: The authors state that steel plants need rollers for rollgangs, shafts for straightening machines, and different shafts and axles. The construction of rollers for rollgangs at large steel plants are varied. Their lengths reach up to 3,500 mm, their diameters up to 400 mm. Shafts for straightening machines have also large dimensions (Fig.1). For restoration of shafts and axles a special tool engine has been planned at the plant imeni Dzerzhinskiy. The following technology for automatic arc welding has been worked out for this engine: 1) For hard facing with wire of steel type St6 of 5 mm diameter the transportation of the surface which is to be welded, a speed of 40-46 m/h shall be taken. The current shall be 600-650 A, the voltage 28-36 V; 2) for hard facing with wires of steel type 30KhGSA of 3.5 mm diameter, the transportation speed

Card 1/2

Automatic Hard Facing and Reinforcing of Shafts

of the surface shall be 46-52 m/h. The current in this case is 400-450 A, the voltage 30-36 V; 3) when using wire of steel type Kh20N10G6 of 3.5 mm diameter, the transportation speed is 36-42 m/h, current 500-550 A, voltage 30-36 V. Most of the examined products had a diameter of less than 400 mm. The technical composition of the weld on the coating depends on the composition of the flux, the electrode wire and the material of the coated sample. A detailed example is given. The book of I.I. Frumin and V.K. Petrichenko on this subject (Metallurgizdat 1956) is mentioned. There are 2 photographs and 1 diagram.

ASSOCIATION: Metallurgicheskiy zavod imeni Dzerzhinskogo (Steel Plant imeni Dzerzhinskiy)

SOV/133-59-1-16/23

AUTHORS: Tylkin, M.A., Candidate of Technical Sciences and Ososok, B.B., Engineer

TITLE: Modernisation of a Roller Straightener (Rekonstruktsiya rolikopravil'noy mashiny)

PERIODICAL: Stal', 1959, Nr 1, pp 73 - 74 (USSR)

ABSTRACT: A modernisation of a roller straightener UZTM used for cold-straightening of rails R-38, R-43 and R-50 and beams is described, and illustrated. Main points: introduction of water cooling of the backing roll for rollers in order to prolong the service life of its bronze bearing (Figures 1 and 2), re-design of passes (Figure 3) which distributed acting stresses over a larger backing surface. The latter was obtained by re-designing bandages (Figures 4 and 5) so that the diameter of their working surface was increased by 20 mm. In addition the durability of bandages was increased by an appropriate heat treatment.
There are 5 figures.

ASSOCIATION: Zavod im. Dzerzhinskogo (imeni Dzerzhinskiy Works)

Cardl/1

69336

S/129/60/000/05/016/023
E091/E235

18.1150

AUTHORS: Tylkin, M. A., Candidate of Technical Sciences, and Sibak, V. I., Engineer

TITLE: Application of High-Manganese Steel for the Manufacture of Metallurgical Instrument Parts

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 5, pp 53-54 (USSR)

ABSTRACT: The steel G13L (1 to 1.3% C and 11 to 14% Mn) is melted in a 3-ton electric melting furnace and used for the casting of shaped articles. As cast, this steel has an austenitic structure with some martensite (see Fig, p 53) and carbide inclusions which lower its mechanical properties. Quenching the steel eliminates this defect. The M_s point is below room temperature, hence rapid cooling fixes the austenitic structure and the steel exhibits high mechanical properties. The hardness can be increased by mechanical deformation. Heating to 200 to 250°C leads to decomposition of the austenite, accompanied by a drastic decrease in plastic properties. Therefore, this steel is unsuitable for the manufacture of components operating at elevated temperatures. The

Card 1/3

69336

S/129/60/000/05/016/023
E091/E235

Application of High-Manganese Steel for the Manufacture of Metallurgical Instrument Parts

steel has a low thermal conductivity and a high coefficient of linear expansion. Hence, in order to avoid internal stress formation, heating to the quenching temperature must be slow. Heating is usually carried out at 60 to 70°C/hour up to 750°C and at 120 to 140°C/hour in the range 750 to 1100°C. Castings of more than 50 mm wall thickness are soaked at 750°C for 1 to 1.5 hours prior to further heat treatment, in order to ensure uniform temperature throughout. Since high-Mn steel tends to get decarburised, soaking at the quenching temperature (1100°C) must not exceed 1 hour, even for large castings. The castings, particularly large ones, are then cooled in running water, the temperature of which must not exceed 30 to 40°C. At a lower cooling rate, carbides precipitate. Often air is introduced into the quenching tank, which causes aeration of the water. After heat treatment, the steel has an austenitic structure and a high impact resistance. The main shortcoming of the steel is that it is difficult to cut. The surface of parts work hardens, which makes

Card 2/3

69336

S/129/60/000/05/016/023
E091/E235

Application of High-Manganese Steel for the Manufacture of Metallurgical Instrument Parts

machining, apart from grinding, impossible. Thus, this steel is most suitable for the manufacture of parts having to withstand impact, but not requiring complicated machining. There is 1 figure.

ASSOCIATION: Dneprovskiy metallurgicheskiy zavod imeni Dzerzhinskogo (Dnepropetrovsk Metallurgical Works imeni Dzerzhinskii)

Card 3/3

KOSENKO, P.Ye., kand.tekhn.nauk; TYLKIN, M.A., kand.tekhn.nauk

Mechanized feed and removal of flux in the automatic build-up welding of metalworking equipment. Svar. proizv. no.7:35-36 Jl '60. (MIRA 13:7)

1. Dneprovskiy metallurgicheskiy zavod im.Dzerzhinskogo.
(Welding--Equipment and supplies)
(Metalworking machinery--Maintenance and repair)

SIVAK, V.I., inzh.; TYLKIN, M.A., kand.tekhn.nauk

Characteristics of the heat treatment of 013L steel products. Stal' 20 no.8:754-755 Ag '60. (MIRA 13:7)

1. Zavod im.Dzerzhinskogo.
(Steel--Heat treatment)

S/148/61/000/005/01[illegible]/015
E073/E535

AUTHOR: Tylkin, M.A.

TITLE: Heat Treatment Conditions of Refractory Steel [illegible]

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1961, No.5, pp.175-176

ABSTRACT: The author aimed at determining the optimum heat treatment for this steel, the composition of which is as follows: 0.[illegible]%, 0.48% Mn, 2.73% Si, [illegible]% Cr, 0.024% S, 0.021% P. The optimum heat treatment was found to be the following: oil quenching from 1050°C with subsequent tempering at 650°C, followed by cooling in oil. The work was carried out under the direction of Academician of the USSR G.V. Kurdyumov.

ASSOCIATION: Dneprodzerzhinskiy metallurgicheskiy institut (Dneprodzerzhinsk Metallurgical Institute)

SUBMITTED: November 18, 1960

Card 1/1

TYLKIN, M.A., inzh.; ZASPITSKIY, N.A., inzh.

Thermal fatigue of steels. Mashinostroenie no.4:73-74 Jl-Ag '64. (MIRA 17:10)

TYLKIN, M.A., kand. tekhn. nauk; MEL'NICHENKO, G.P., inzh.; ZASPITSKIY, [illegible], inzh.

Heat resistance of hard-faced cores of cranes equipped with crablike tongs. Svar. proizv. no.5:14-16 My '64.
(MIRA 18:11)

1. Metallurgicheskiy zavod imeni Dzerzhinskogo.

TYLKIN, M.A., kand. tekhn. nauk; MEL'NICHENKO, G.P., inzh.; KORDABNEV I.L., inzh.; ZASPITSKIY, N.A., inzh.; GREBENIK, V.M., kand. tekhn. nauk; SYSUYEV, Yu.A., kand. tekhn. nauk; SVETOZAROV, A.V., inzh.

Temperature of the double-walled bell in the charging equipment. Stal' 25 no.12:1079-1080 D '65. (MIRA 18:12)

TYLKIN, M.A.; MEL'NICHENKO, G.P.; ZASPITSKIY, N.A.

Service temperature conditions and thermal resistance of hot trim saw disks. Izv. vys. ucheb. zav.; chern. met. 8 no.2: 183-187 '65. (MIRA 18:2)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Metallurgicheskiy zavod im. Dzerzhinskogo.

POSTOL'NIK, Yu.S.; TYLKIN, M.A.

Analytic and experimental determination of the temperature conditions of performance of blades of bloom shears. Inzh.-fiz. zhur. 7 no.9:14-18 S '64. (MIRA 17:12)

1. Metallurgicheskiy zavod-vtuz imeni M.I.Arsenicheva, Dneprodzerzhinsk.

TYLKIN, M.A.

Heat-resistance and weld-resistance of deposited metal. Avtom. svar. 17 no.7:36-43 Jl '64. (MIRA 17:8)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.

GREBENIK, V.M.; IVANCHENKO, F.K.; TYLKIN, M.A.; KUCHERENKO, V.F.

Strength and causes for the rupture of a drive shaft for the mechanism of a propelled car on a floor-type charging machine. Izv. vys. ucheb. zav.; chern. met. 8 no.1:169-175 '65 (MIRA 18:1)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.

TYLKIN, M.A.; MEL'NICHENKO, G.P.; ZASPITSKIY, N.A.; KHUDENKO, M.A.; YUZVA, A.B.

Investigating service temperature conditions and the heat resistance of rolls on transverse-spiral rolling mills. Izv. vys. ucheb. zav.; chern. met. 7 no.11:124-130 '64. (MIRA 17:12)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Dneprovskiy metallurgicheskiy zavod.

TYLKIN, M.A., dotsent, kand. tekhn. nauk; MEL'NICHENKO, G.P., inzh.; ZASPITSKIY, N.A., inzh.

Temperature conditions of operation, heat resistance, and wear resistance of rolls on three-high sheet rolling mills. Stal' 24 no.10:906-909 O '64. (MIRA 17:12)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i zavod im. Dzerzhinskogo.

TYLKIN, M.A., kand. tekhn. nauk, dotsent; GREBENIK, V.M., kand. tekhn. nauk, dotsent; MEL'NICHENKO, G.P., inzh.; ZASPITSKIY, N.A., inzh.; KORDABNEV, I.L., inzh.

Temperature changes in the cup of a large blast furnace cell. Stal' 24 no.5:408-411 My '64. (MIRA 17:12)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz, Dnepropetrovskiy metallurgicheskiy institut i Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo.

SOKOLOV, Lev Dmitriyevich; GREBENIK, Viktor Mikhaylovich; TYLKIN, Mikhail Arkad'yevich; Prinimal uchastiye BAKLUSHIN, I.L.; SMIRNOVA, V.V., kand. tekhn. nauk, dots., retsenzent; ROKOTYAN, Ye.S., doktor tekhn. nauk, prof., retsenzent; MOROZOV, B.A., doktor tekhn. nauk, retsenzent

[Study of the equipment of rolling mills] Issledovanie prokatnogo oborudovaniia. Moskva, Metallurgiia, 1964. 487 p. (MIRA 17:11)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im. N.E. Baumana (for Smirnova).

NIKITSKAYA, V.A.; TYLKIN, M.A.; CHERNEVICH, Ye.M.

Metallographic investigation of 20p steel ingots and intermediate products. Izv. vys. ucheb. zav.; chern. met. 7 no.3:169-178 '64. (MIRA 17:4)

1. Zavod im. Dzerzhinskogo i Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.

TYLKIN, M. A.; ZASPITSKIY, N. A.; MEL'NICHENKO, G. P.

Investigating temperature conditions of the service of charging bars. Izv. vys. ucheb. zav.; chern. met. 7 no. 5:184-189 '64.
(MIRA 17:5)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Metallurgicheskiy zavod im. Dzerzhinskogo.

TYLKIN, M.A.; ZASPITSKIY, N.A.; KUZNETSOVA, L.M.

Temperature service conditions and the heat resistance of cutters for hot cutting. Izv. vys. ucheb. zav.; chern. met. 7 no.2:189-194 '64. (MIRA 17:3)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i zavod im. Dzerzhinskogo.

TYLKIN, M. A., kand. tekhn. nauk; GREBENIK, V. M., kand. tekhn. nauk; KUCHERENKO, V. F., inzh.; ALPEYEV, V. G., inzh.; NIKITSKAYA, V. A., inzh.

Heat treatment of crane wheels. Mashinostroenie no.5:57-60 S-O '62. (MIRA 16:1)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz im. M. I. Arsenicheva (for Tylkin, Grebenik, Kucherenko). 2. Metallurgicheskiy zavod im. Dzerzhinskogo (for Alpeyev, Nikitskaya).

(Steel--Heat treatment)
(Cranes, derricks, etc.)

GREBENIK, V.M.; TYLKIN, M.A.

Distribution of relations between static and fatigue characteristics in the steel hardening and tempering process. Izv.vys. ucheb.zav.; chern.met. 6 no.1:125-127 '63. (MIRA 16:2)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.
(Steel—Heat treatment) (Strains and stresses)

S/148/63/000/001/014/019
E073/E451

AUTHORS: Grebenik, V.M., Tylkin, M.A.

TITLE: Extension of the relations between static and fatigue characteristics to the case of hardening and tempering of steels

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.1, 1963, 125-127

TEXT: The effect of heat treatment on the fatigue limit has not been adequately studied and, therefore, it is difficult to lay down satisfactory heat-treatment conditions to obtain a required fatigue strength. One method of determining the fatigue limit is by using empirical formulas which correlate the fatigue limit with the static characteristics. Of the formulas which show satisfactory agreement with experimental data, that of Zhukov is the most extensively used:

$$\sigma_{-1} = 0.3S_k - 1 \qquad (1)$$

where σ_{-1} is the fatigue limit. The real breaking strength at $\psi \geqslant 50\%$ is

Card 1/4

Extension of the relations ...

$$S_k = \sigma_b(6.9\psi^2 = 4.85\psi + 2.21) \quad (2)$$

Thus we obtain

$$\sigma_{-1} = 0.3\sigma_b(6.9\psi^2 - 4.85\psi + 2.21) - 1 \quad (3)$$

For steels with $\psi \leqslant 50\%$

$$\sigma_{-1} = 0.3\sigma_b(0.294 + 0.39\psi) \quad (5)$$

Recent work shows that the above relations also hold for steels that have been subjected to heat treatment throughout their volume, the error not exceeding 5 to 10%. The difference in σ_{-1} values is somewhat larger for hardened steels in which a saturated solid solution of carbon is present in the α-iron of the martensite. As the martensite crystals are in an elastically deformed state caused by considerable volume changes at temperatures where the rate of stress relaxation is low, they have a high resistance to plastic deformation, which is increased as a

result of considerable crystal lattice distortion caused by saturation with carbon. This upsets the relationship between static and fatigue characteristics. During tempering, the solid solution decomposes and carbon is rejected from the martensite, forming carbides; as a result, the degree of distortion of the α-phase lattice decreases. Tempering at 300 to 350°C leads to an almost complete elimination of the carbon from the solid solution regardless of the carbon content in the initial martensite. Although at these temperatures a coherent relationship is retained between the crystal lattice of the carbide and the α-phase, the structure of the steel approaches equilibrium. At the given tempering temperatures, residual austenite is completely eliminated from the structure and a ferrite-cementite mixture is formed for which the experimental fatigue limit results are in good agreement with calculated values. Thus, from static test results it is possible to determine approximately the fatigue limit of hardened steel tempered above 350 to 400°C. Published results are reproduced showing that with increasing tempering temperature at 450 to 550°C the contraction slightly decreases without a corresponding increase in the static or fatigue strength of the

steels investigated, similar results being obtained for other steels. The method here described of using results of static tests for determining the fatigue characteristics over the entire range of tempering temperatures can be utilized for evolving heat treatments and for estimating the fatigue strength of machine components. There is 1 figure.

ASSOCIATION: Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz (Dneprodzerzhinsk Metallurgical Works-Technical High School)

SUBMITTED: August 21, 1961

GREBENIK, V.M.; TYLKIN, M.A.; KUCHERENKO, V.F.; CHERIEVICH, Ye.M.

Analysis of the breakage of metallurgical equipment parts. Izv. vys. ucheb. zav.; chern. met. 5 no.8:175-182 '62. (MIRA 15:9)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Metallurgicheskiy zavod im. F. E. Dzerzhinskogo.

TYLKIN, M.A.; GREBENIK, V.M.

Effect of oxyacetylene hardening on fatigue strength. Izv. vys. ucheb. zav.; chern. met. 5 no.5:146-152 '62. (MIRA 15:6)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.
(Flame hardening) (Metals--Fatigue)

TYLKIN, M.A.; KOSENKO, P.Ye.; YEROSHKIN, M.G.

Introducing automatic control of oxyacetylene hardening of cylindrical gear. Biul.TSIICHM no.9:47-49 '60. (MIRA 15:4)

1. Dneprodzerzhinskiy vechernyy metallurgicheskiy institut (for Tylkin, Kosenko). 2. Metallurgicheskiy zavod imeni Dzerzhinskogo (for Yeroshkin).
(Case hardening) (Automatic control)

S/148/62/000/008/009/009
E193/E383

AUTHORS: Grebenik, V.M., Tylkin, M.A., Kucherenko, V.F. and Chernevich, Ye.M.

TITLE: Analysis of the fracture surfaces of parts of metal-working equipment

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 8, 1962, 175 - 182

TEXT: A proper understanding of factors affecting the resistance of working parts to fracture is of the utmost importance to both the designer and user of metal-working equipment. In practice, the most frequent type of fracture is that associated with fatigue and a great deal of useful information regarding the mechanism and the precise cause of failure can be obtained by examination of the fracture surface and correlating the results with other known pertinent data. To demonstrate the usefulness of this investigational method the present authors applied it to establish the cause of fracture of six components. By correlating the service conditions of each part with its material, heat-treatment, mechanical properties,

Card 1/3

macro- and microstructure and the patterns of the fracture surfaces, they arrived at the following conclusions: 1) the fracture of the jaw of the universal coupling of the upper roll journal of a 750 stand was caused by a single overloading due to accidentally folded strip passing through the rolls, the low impact strength of the steel being a contributory factor; 2) the fracture in the second groove of the upper roll of a blooming mill was caused by stress concentration contributing to the formation of the first fatigue crack, which initiated ductile fracture of the component; 3) the fracture of the middle roll of a 3-high stand 550 was attributed to the fact that the roll had not been preheated when it was reconditioned by the building-up process. This set up internal stresses, leading to the formation of a circumferential crack and later to brittle fracture; 4) the fracture of the main shaft of the flywheel of a 500 mm stand was caused by a large number of short-duration overloads; 5) alternating loads caused the fracture of a shaft in the reducing gear of a wire-drawing machine; 6) alternating loads of a magnitude approaching the

Analysis of the fracture S/148/62/000/008/009/009
E193/E383

fatigue limit of the material caused fatigue fracture of the pulley of a blast-furnace charging-skip hoist. The examples quoted demonstrated the need for rigorous control of all the factors which might contribute to the formation of fatigue cracks (quality of the materials, design, heat and mechanical treatment, service loads, corrosive media). It was concluded that all working parts should be periodically inspected and if fatigue cracks were detected they should be removed. Detailed investigation of each failure should be carried out and the results used to take measures to prevent recurrence of the failure. There are 6 figures and 1 table.

ASSOCIATIONS: Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz (Dneprodzerzhinsk Metallurgical Works - Vtuz)
Metallurgicheskiy zavod im. F.E. Dzerzhinskogo (Metallurgical Works im. F.E. Dzerzhinskiy)

SUBMITTED: March 27, 1961

Card 3/3

CHERNOV, Nikolay Nikitovich; TYLKIN, Mikhail Arkad'yevich; KORDABNEV, Ivan Lavrent'yevich; GOLYATKINA, A.G., red.; ATTOPOVICH, M.K., tekhn. red.

[Blast furnace charging equipment]Zasypnye ustroistva domennykh pechei. Moskva, Metallurgizdat, 1962. 239 p. (MIRA 15:10)

(Blast furnaces—Equipment and supplies)

S/148/62/000/005/008/009
E111/E135

AUTHORS: Tylkin, M.A., and Grebenik, V.M.

TITLE: Influence of oxyacetylene hardening on fatigue strength

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.5, 1962, 146-151

TEXT: The fatigue strength and the wear resistance of parts can be increased by surface hardening. The most suitable for large parts is oxyacetylene hardening. The increase in fatigue strength is due to the generation of compressive stresses in the surface layer, which counteract to some extent the harmful tensile stresses produced there by bending. This is true only if the hardened layer follows exactly the contour of the part. Numerous examples from practice show that even small deviations as regards uniformity and depth give rise to stresses which lower the fatigue strength. There are 5 figures.

ASSOCIATION: Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz (Dneprodzerzhinskiy Metallurgical Works - Technical High School)

Card 1/1

SUBMITTED: December 21, 1960

TYLKIN, M.A., kand.tekhn.nauk; NIKITSKAYA, V.A., inzh.; BURKHAN, G.N., inzh.

Efforts to avoid discards in rolled telegraph wire rods. Stal' 21 no.5:448-451 My '61. (MIRA 14:5)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i zavod im. Dzerzhinskogo.

(Rolling (Metalwork)--Quality control)
(Telegraph wire)

KOBLYUK, Semen Stepanovich; TYLKIN, M.N., red.

[For new equipment; practice in operating the "Tula" coal mining complex] Za novuiu tekhniku; iz opyta ekspluatasii mekhanizirovannogo kompleksa "Tula." Tula, Tul'skoe knizhnoe izd-vo, 1963. 26 p. (MIRA 17:9)

1. Nachal'nik 5-go ochistnogo uchastka kommunisticheskogo truda shakhty No.38 tresta "Novomoskovskugol'" kombinata "Tulaugol'" (for Koblyuk).

SHCHERBAKOV, Leonid Mikhaylovich, kandidat fiziko-matematicheskikh nauk; TYLKIN, M.N., redaktor; PULIN, L.I., tekhnicheskiy redaktor.

[Atomic energy in the service of man] Atomnaia energiia na sluzhbe cheloveka. Izd. 2-oe, ispr. i dop. Tula. Tul'skoe kn-vo, 1956. 55 p. (Atomic power) (MLRA 9:6)

ROSTOVTSEV, Lev L'vovich; TYLKIN, M.N., red.; PULIN, L.I., tekhn.red.

[Electricians introduce automatic control] Elektrotekhniki avtomatiziruiut proizvodstvo. Tula, Tul'skoe knizhnoe izd-vo, 1959. 17 p. (MIRA 13:10)

1. Starshiy elektrik sortoprokatnogo tsekha Revyakinskogo metallo-prokatnogo zavoda (for Rostovtsev).
(Automatic control)

ALFEROV, Vyacheslav Il'ich; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[Advanced technological equipment] Progressivnaia tekhnologicheskaia osnastka. Tula, Tul'skoe knizhnoe izd-vo, 1962. 25 p. (MIRA 16:8)
(Interchangeable mechanisms)

GLIK, Lev Bentsionovich, dots.; EFROS, Grigoriy Matveyevich, kand. tekhn. nauk; POPOV, Nikolay Anatol'yevich, zasl. deyatel' nauki i tekhniki, doktor tekhn. nauk, prof.; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[Foamed slag; its production and use] Shlakovaia pemza; proizvodstvo i primenenie. Pod red. N.A.Popova. Tula, Tul'skoe knizhnoe izd-vo, 1962. 262 p. (MIRA 16:8)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov).
(Slag)

YUDIN, Lev Grigor'yevich, inzh.; FREYS, Viktor Fedorovich; TYLKIN, M.N., red.; PULIN, L.I., tekhn.red.

[Plastics and their use in the machinery industry] Plastmassy i ikh ispol'zovanie v mashinostroenii. Tula, Tul'skoe knizhnoe izd-vo, 1959. 108 p. (MIRA 13:5)
(Plastics) (Machinery industry)

BAKULEV, Grigoriy Dmitriyevich, prof., doktor ekonom.nauk; SOLOMENTSEV, Dmitriy Gavrilovich, dotsent, kand.ekonom.nauk; TYLKIN, M.N., red.; PULIN, L.I., tekhn.red.

[Industry of the Tula Economic Region] Promyshlennost' Tul'skogo ekonomicheskogo raiona. Tula, Tul'skoe knizhnoe izd-vo, 1960. 366 p. (MIRA 13:7)
(Tula Province--Industries)

GEL'TISHCHEV, Anatoliy Alekseyevich; TYLKIN, M.N., red.; PULIN, L.I., tekhn.red.

[Less cost per production unit] Men'she zatrat na edinitsu produktsii. Tula, Tul'skoe knizhnoe izd-vo, 1958. 39 p. (MIRA 13:3)

(Tula Province--Costs, Industrial)

SHEFTEL', Abram Isayevich, kand.tekhn.nauk; TYLKIN, M.N., red.;
PULIN, L.I., tekhn.red.

[Power supply of Tula Economic Region] Energeticheskaia baza Tul'skogo ekonomicheskogo raiona. Tula, Tul'skoe knizhnoe izd-vo, 1958. 46 p. (MIRA 13:3)
(Tula Province--Power resources)

ALEKSEYEV, Aleksey Alekseyevich; MARIONKOV, Konstantin Sergeyevich; TILKIN, M.N., red.; PULIN, L.I., tekhn.red.

[Using precast construction elements in building houses] Stroitel'stvo zhilykh domov iz sbornykh konstruktsii. Tula, Tul'skoe knizhnoe izd-vo, 1959. 141 p. (MIRA 13:3)
(Precast concrete construction)

BRYKIN, Aleksey Alekseyevich; TYLKIN, M.N., red.

[Construction workers' labor productivity] Proizvoditel'nost' truda rabochikh-stroitelei. Tula, Tul'skoe knizhnoe izd-vo, 1963. 38 p. (MIRA 17:9)

AMVROSIYEV, Oleg Nikolayevich; TYLKIN, M.N., red.

[Equipment should have a full load; ways for increasing the shift coefficient for the working of equipment in the machinery industry of Tula Province] Oborudovaniiu - polnuiu nagruzku; puti povysheniia smennosti raboty oborudovaniia v tul'skom mashinostroenii. Tula, Tul'skoe knizhnoe izd-vo, 1963. 39 p. (MIRA 17:8)

FOMINYKH, I., kandidat tekhnicheskikh nauk; ZELIKMAN, Yu.; KNYAZEV, V., tekhnolog; TYLKIN, M.N., redaktor; PULIN, L.I., tekhnicheskiy redaktor

[New methods of casting; casting practices of plants in Tula and Tula Province] Novoe v liteinom proizvodstve; iz opyta liteinykh tsekhov predpriiatii Tuli i oblasti. [Tula] Tul'skoe knizhnoe izd-vo, 1956. 78 p. (MLRA 10:9)

1. Glavnyy metallurg laptevskogo zavoda "Uglemash" (for Zelikman); 2. Liteynyy tsekh zavoda Ministerstva putey soobshcheniya (for Knyazev)
(Tula Province--Founding)

VOSKRESENSKIY, Georgiy Ivanovich; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[Workers' meetings; studies on conducting general meetings of workers and employees]Rabochie sobraniia; ocherki ob opyte provedeniia obshchikh sobranii rabochikh i sluzhashchikh. Tula, Tul'skoe knizhnoe izd-vo, 1960. 46 p. (MIRA 14:7)
(Tula Province--Works councils)

ALEKSEYEV, Aleksey Alekseyevich; GOLOVIN, Andrey Andreyevich; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[Technical and economic work planning in a construction organization] Tekhniko-ekonomicheskoe planirovanie raboty stroitel'noi organizatsii. Tula, Tul'skoe knizhnoe izd-vo, 1960. 156 p. (MIRA 14:7)

(Construction industry--Finance)

AMBROSIYEV, Oleg Nikolayevich; TYLKIN, M.N., redaktor; PULIN, L.I., tekhnicheskikh nauk

[Save every minute; practices of Tula metal working enterprises in eliminating losses of working time] Berech' kazhduiu minutu; iz opyta tul'skikh metalloobrabatyvaiushchikh predpriiatii po ustraneniiu poter' rabochego vremini. [Tula] Tul'skoe knizhnoe izd-vo, 1956. 67 p. (MIRA 10:9)
(Efficiency, Industrial) (Machinery industry)

YAKUSHIN, P.M.; TYLKIN, M.N., redaktor; PULIN, L.I., tekhnicheskiy redaktor

[Safety engineering in metal working and hot metal shops] Tekhnika bezopasnosti v metalloobrabatyvaiushchikh i goriachikh tsekhakh v pomoshch' tokariu, slesariu, pressovshchiku, elektrogazosvarshchiku, kuznetsu, termistu, liteishchiku. [Tula] Tul'skoe knizhnoe izd-vo, 1956. 54 p. (MLRA 10:9)
(Machinery industry--Safety measures)

PREYS, V.F., kandidat tekhnicheskikh nauk; SHISHOV, V.; SHKYNIN, L., glavnyy tekhnolog oruzheynogo zavoda; SHKARUPA, V.; TYLKIN, M.N., redaktor; PULIN, L.I., tekhnicheskiy redaktor

[Mechanization and automatization of production; the experience of the Tula machine construction plant] Mekhanizatsiia i avtomatizatsiia proizvodstva; iz opyta Tul'skikh predpriiatii mashinostroeniya. [Tula] Tul'skoe kn-vo, 1956. 95 p. (MLRA 9:9)

1. Glavnyy tekhnolog Tul'skogo zavoda Ministerstva putey soobshcheniya (for Shishov). 2. Glavnyy inzhener Tul'skogo kombaynovogo zavoda (for Shkarupa)
(Automatic control)
(Tula--Machinery industry)

BELOKOPYTOVA, Ye.V.; ZAYTSEVA, Ye.D.; IVANOVA, V.I.; KUCHERENKO, A.A.; OVCHINNIKOVA, L.N.; ODINOKOVA, Ye.A.; SHCHUKIN, N.M.; BELOVA, K.F.; SOSKOVA, M.S.; DEMIN, P.M., red.; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[Economy of Tula Province; a statistical manual] Narodnoe khoziaistvo Tul'skoi oblasti; statisticheskii sbornik. [Tula] Tul'skoe knizhnoe izd-vo, 1958. 215 p. (MIRA 11:8)

1. Tula (Province). Statisticheskoye upravleniye.
(Tula Province--Statistics)

BODROV, Viktor Fedorovich; TYLKIN, M.N., red.; PULIN, L.I., tekhn. red.

[The great from the small] Bol'shoe iz malogo. Tula, Tul'skoe knizhnoe izd-vo, 1963. 11 p. (MIRA 16:10)

1. Elektroslesar' shakhty No.12 "Uzlovskuglya" (for Bodrov).
(Mine hoisting)

KHILENKO, Anatoliy Aleksandrovich; TYLKIN, M.N., red.; FULIN, L.I., tekhn.red.

[Toward the heights of technical progress] K vysotam tekhnicheskogo progressa. Tula, Tul'skoe knizhnoe izd-vo, 1963. 40 p. (MIRA 16:12)

1. Starshiy inzhener TSentral'nogo byuro tekhnicheskoy informatsii Priokskogo sovnarkhoza (for Khilenko).
(Technological innovations)

IZYUMOV, Boris Mironovich; TYLKIN, M.N., red.

[For the mine electrician] Rabotniku shakhtnogo elektro-khoziaistva. Tula, Tul'skoe knizhnoe izd-vo, 1964. 69 p. (MIRA 18:3)

84822

S/020/60/134/005/005/023
B019/B060

16.5400

AUTHOR: Tylkin, M. Ya.

TITLE: Hamming's Geometry of Unit Cubes

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 5, pp. 1037 - 1040

TEXT: The problem of the isometric imbedding of finite metric spaces in unit cubes was studied with a Hamming metric. This problem can be converted into expressions of algebraic logics, of linear programing, in terms of the theory of self-correcting codes, and the theory of graphs. The author started his investigation from a finite metric space A of power l; the quadratic distance matrix $\tilde{A} = \|\varrho_{qv}\|$ is given with the rank l. Here, the elements ϱ_{qv} are the distances between the points q and v in an arbitrary numbering of the points of space A. Z is the symbol for a certain amount of corners of the n-dimensional unit cube. One thus has a number of orthogonal matrices $\tilde{Z} = \|z_{ij}\|$, in which the q-th line gives the

Card 1/3

Hamming's Geometry of Unit Cubes

S/020/60/134/005/005/023
B019/B060

coordinates of the q-th corner. The number of lines in $\tilde{Z}$ is equal to the power of Z, the number of columns being equal to n. If, then, $r_{qv} = \sum_{j=1}^{n} |z_{qj} - z_{vj}|$ is taken as the distance between the q-th and the v-th line of $\tilde{Z}$, r_{qv} will define the Hamming metric in a unit cube. All lines of matrix $\tilde{Z}$ are in a finite metric space; its distance matrix is designated by $r(\tilde{Z})$, and it is stated that $\tilde{A}$ is realized by the code of $\tilde{Z}$, if $r(\tilde{Z}) = \tilde{A}$. The author then examines the determination of all solutions of equation $r(\tilde{Z}) = \tilde{A}$. Criteria for the representability and for the determination of all codes representing a given distance matrix $\tilde{A}$ are obtained with the aid of four theorems and a lemma in a bulky investigation. Without restricting the generality, the author restricts himself to such codes as satisfy the following conditions: a) the columns are ordered by rising indices; b) the first row consists only of zeros; c) the number of columns is equal to the dimension. An arbitrary realizable distance matrix has a finite number of representations and one speaks of a spectrum of representation dimensions. Thus the distance matrix $\tilde{A}_4$ is a

Card 2/3

84822

Hamming's Geometry of Unit Cubes

S/020/60/134/005/005/023
B019/B060

(5,5) matrix, its representations have the dimensions 4 and 6, but there are no representations with dimension 5. Isomerism also appears in the representation of distance matrices. There are 1 table and 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: May 20, 1960, by S. L. Sobolev, Academician

SUBMITTED: May 18, 1960

Card 3/3

TYLKIN, M.Ye. (Moskva)

Concerning the realization of distance matrices in unit cubes. (MIRA 15:4)
Prob. kib. no.7:31-42 '62.
(Matrices)

TYLKIN, V., kand.tekhn.nauk (Donetsk); BELOVA, T. (Donetsk); KOZLOV, V. (Donetsk); KHREBTOVA, A. (Donetsk)

Butter with the addition of yeast and Vitamin C. Sov. torg. 36 no.4:27-28 Ap '63. (MIRA 16:5)
(Butter)

TYLKIN, V.B.

USSR/Chemical Technology. Chemical Products and Their Application -- Food industry, I-28

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6636

Author: Skrobanskiy, G. G., Tylkin, V. B., Khrebtova, A. P.

Institution: Khar'kov Institute of Soviet Commerce

Title: Vitaminization of Some Dairy Products

Original Publication: Nauch. zap. Khar'kovsk. in-t sov. torgovli, 1956, No 5(7), 139-143

Abstract: Work has been carried out on enrichment with vitamin C of sour cream and butter. Per 1 kg of finished product were added 0.2 g synthetic ascorbic acid (AA) or 6 g of vitamin C concentrate (VC) from hip bearing rose. To sour cream AA or VC were added in the form of a solution in buttermilk; to the butter AA was added prior to pressing of the butter. It was found that enrichment of sour cream with AA and VC increases its nutritive value without affecting the chemical indices of quality that are specified in the GOST and produces no effect on the taste. Following storage of sour cream for 7 days at

Card 1/2

USSR/Chemical Technology. Chemical Products and Their Application -- Food industry, I-28

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6636

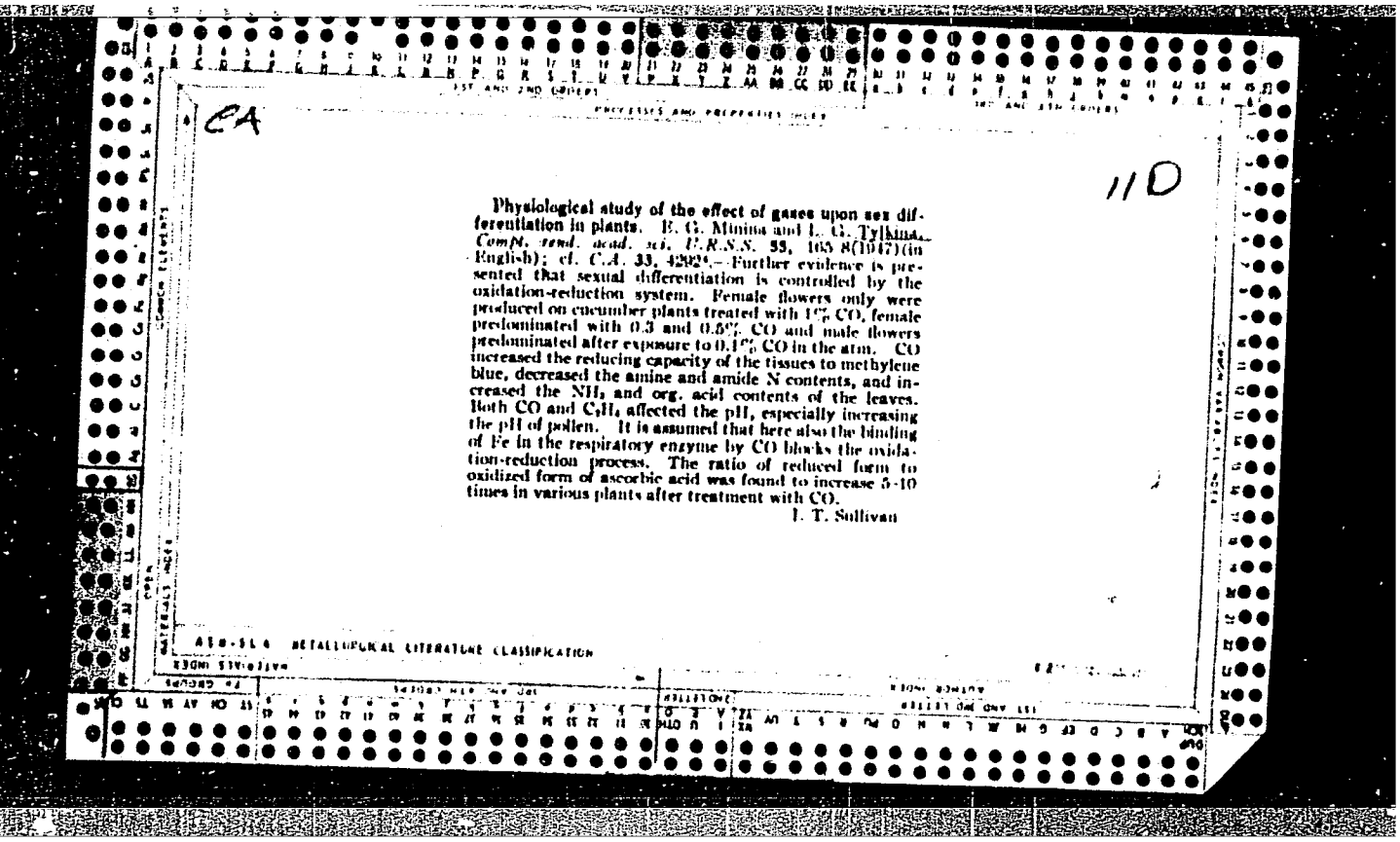
Abstract: 6° the vitamin activity of samples enriched with AA was 82%, that of samples enriched with VC was of 76%. Addition of AA and VC to increase the vitamin activity of butter did not yield positive results.

Card 2/2

TYLKIN, V. B.

Tylkin, V. B. -- "The Commercial Evaluation of Ice Cream." Min Trade USSR. Moscow Inst of the National Economy imeni G. V. Plekhanov. Moscow, 1956. (Disseration For the Degree of Candidate in Technical Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103114



CA

11D

Physiological study of the effect of gases upon sex differentiation in plants. B. G. Minina and L. G. Tylkina. *Compt. rend. acad. sci. U.R.S.S.* 55, 165-8(1947)(in English); cf. *C.A.* 33, 4292⁶.—Further evidence is presented that sexual differentiation is controlled by the oxidation-reduction system. Female flowers only were produced on cucumber plants treated with 1% CO, female predominated with 0.3 and 0.5% CO and male flowers predominated after exposure to 0.1% CO in the atm. CO increased the reducing capacity of the tissues to methylene blue, decreased the amine and amide N contents, and increased the NH_3 and org. acid contents of the leaves. Both CO and C_2H_4 affected the pH, especially increasing the pH of pollen. It is assumed that here also the binding of Fe in the respiratory enzyme by CO blocks the oxidation-reduction process. The ratio of reduced form to oxidized form of ascorbic acid was found to increase 5-10 times in various plants after treatment with CO.

I. T. Sullivan

L 33423-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6012427 SOURCE CODE: UR/0081/65/000/020/G024/G024

AUTHORS: Mesyats, N. A.; Kaplin, A. A.; Zakharov, M. S.; Tychkina, G. K.

TITLE: Development of an improved quick method for determining copper microconcentrations in high-purity indium by the method of amalgam polarography with accumulation

SOURCE: Ref. zh. Khimiya, Abs. 20G151

REF SOURCE: Izv. Tomskogo politekhn. in-ta, v. 128, 1964, 42-45

TOPIC TAGS: copper, indium, electrolysis, polarography, HIGH PURITY METAL

ABSTRACT: The use of amalgam polarography with accumulation is described for determining microamounts of Cu in high-purity indium. Two grams of indium are dissolved in 1.5 ml 11 N HNO_3 with heating up to 60—50C. The solution is evaporated to 0.1—0.2 ml, 2 ml 1 M H_3PO_4 are added, electrolysis is carried out for 6 min, and the anode peak is recorded. The analysis of 3 samples (ea 2 parallel and 2 control tests) lasts about 6 hr. The method permits determination of $\geq 4 \times 10^{-6}$% Cu. In determining 2.5×10^{-5}% Cu, the standard deviation is ± 14%. G. Prokhorova. [Translation of abstract] [NT]

SUB CODE: 11/ SUBM DATE: none

Card 1/1 ULR

SAV[illegible]y Mikhaylovich, doktor khim. nauk; TYLKINA, [illegible] Aronovna; POVAROVA, Kira Borisovna

[Rhenium alloys] Splavy reniia. Moskva, Nauka, 1965. 334 p.
(MIRA 18:10)

TYLKIN, Mikhail Arkad'yevich; BREZHNEV, Ya.I., inzh., retsenzent; GOLYATKINA, A.G., red.

[Strength and wear-resistance of metallurgical equipment parts] Prochnost' i iznosostoikost' detalei metallurgicheskogo oborudovaniia. Moskva, Metallurgiia, 1965. 347 p. (MIRA 18:8)

L 4451-66 EWT(m)/EWP(w)/EPF(n)-2/T/EWP(t)/EWA(z)/EWP(b) IJP(c)

ACC NR: AT5023098 JD/WW/HW/JG/GS SOURCE CODE: UR/0000/[illegible]/0000/0241/0249

AUTHOR: Tylkina, M. A.; Tsyganova, I. A.

44,55 44.55

ORG: none

72
81

TITLE: Effect of alloying on the mechanical properties of cast tantalum 44.55

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov (Problems of large-scale metallurgy and physical chemistry of new alloys); k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova. Moscow, Izd-vo Nauka, 1965, 241-249

TOPIC TAGS: tantalum, cast tantalum, tantalum alloy, tantalum property, tantalum alloy property, titanium containing alloy, zirconium containing alloy, vanadium containing alloy, niobium containing alloy, chromium containing alloy, molybdenum containing alloy, tungsten containing alloy, rhenium containing alloy, cobalt containing alloy, nickel containing alloy

ABSTRACT: The effect of alloying with Ti, Zr, V, Nb, Cr, Mo, W, Re, Co, or Ni on the mechanical properties of cast tantalum have been investigated. The hardness of unalloyed tantalum drops with increasing purity. Sintered tantalum had a hardness of 240 kg/mm^2, a tensile strength of 35 kg/mm^2, and an elongation of 28%; arc melting in a helium atmosphere lowered the hardness to 150—170 kg/mm^2, and increased the strength, elongation, and reduction of area to 40 kg/mm^2, 35%, and 70%, respectively. Electron-beam-melted tantalum had a hardness of 80 kg/mm^2, a strength of 20 kg/mm^2,

Card 1/2

ACC NR: AT5023098

and a reduction of area of 98%. Alloying, as a rule, increased hardness and strength, but reduced ductility. Cobalt and nickel produce the sharpest increase in hardness; titanium and niobium had practically no effect. The best combination of properties was achieved by alloying with tungsten, molybdenum, or rhenium, which raises the room-temperature strength of the alloy up to 60—75 kg/mm^2 while maintaining sufficient ductility. At 1500 and 1800C, the strength of tantalum-tungsten (25.6 and 10.2 kg/mm^2) and tantalum-rhenium (17.8 and 9.2 kg/mm^2) alloys is 2—3 times higher than that of unalloyed tantalum (9.38 and 5.4 kg/mm^2). The maximum strength (72—74 kg/mm^2) of tantalum-niobium alloy is attained at a niobium content of 30—40%; in this case, however, the alloy elongation drops to 18—20% and the reduction of area to 38—47%. Tantalum-niobium alloy has good formability at room temperature regardless of the amount of components. Orig. art. has: 4 figures and 5 tables. [ND]

SUB CODE: MM/ SUBM DATE: 19May65/ ORIG REF: 004/ OTH REF: 007/ ATD PRESS: 4/24

Card 2/2

DOLGOPOLOV, Konstantin Vasil'yevich; SOKOLOV, Aleksey Vasil'yevich; FEDOROVA, Yevgeniya Fedorovna; SKOBNIKOV, M.L., retsenzent; TYLKINA, M.A., st. nauchn. sotr., retsenzent; FREYKIN, Z.G., st. nauchn. sotr., retsenzent; RODIONOVA, F.A., red.; PASHCHENKO, O.V., red. kart; KARPOVA, T.V., tekhn. red.

[Iron ores of the U.S.S.R.] Zheleznye rudy SSSR; posobie dlia uchitelia. Moskva, Uchpedgiz, 1963. 157 p. (MIRA 17:2)

1. Glavnyy spetsialist Gosplana SSSR (for Skobnikov).
2. Institut chernoy metallurgii imeni Baykova (for Tylkina).
3. Institut geografii AN SSSR (for Freykin).

SAVITSKIY, Ye.M.; TYLKINA, M.A.; KHAMIDOV, O.Kh.; Prinimali uchastiye: LOBYNTSEVA, I.M.; PRAVOVEROV, N.L.; POLYAKOVA, V.P.

Palladium-molybdenum system. Zhur. neorg. khim. 9 no.12:2738-2742 D '64. (MIRA 18:2)

Simple portable apparatus for measurement of radioactivity of soft β-emitters. Richard Tykva (Chem. ústav čsl. akad. věd., Prague). *Chem. listy* 53, 1062-3(1959).—A simple device for measuring radioactivity of soft β-emitters (e.g. in chromatograms and electrophoretograms) consists of a Geiger-Müller counter fitted with a special Pb shield.
M. Hudlický

MAYORSKIKH, Georgiy Ivanovich; TYLKIN, M.N., red.; PULIN, O.I., tekhn. red.

[A house made of local materials; advice to individual home builders] Dom iz mestnykh materialov; sovety individual'nym zastroishchikam. Tula, Tul'skoe knizhnoe izd-vo, 1960. 174 p. (MIRA 14:5)

(Architecture, Domestic)

L 27228-66 EWI(m)/I/EWP(w)/EWP(t) IJP(c) JD/JG

ACC NR: AM6003227 Monograph 28 UR/ B+1

Savitskiy, Yevgeniy Mikhailovich; Tylkina, Mariya Aronovna; Povarova, Kira Borisovna

Alloys of rhenium (Splavy reniya) Moscow, Izd-vo "Nauka," 1965. 334 p. illus., biblio. (At head of title: Akademiya nauk SSSR. Gosudarstvennyy komitet po chernoy i tsvetnoy metallurgii pri gosplane SSSR. Institut metallurgii im. A. A. Baykova) 2500 copies printed.

TOPIC TAGS: rhenium, rhenium alloy, alloy containing rhenium, rhenium production, rhenium property, rhenium alloy property, rhenium phase diagram

PURPOSE AND COVERAGE: This monograph is published as an encyclopedic summary of modern knowledge on rhenium, its alloys and compounds. An attempt was made to generalize the data gathered by authors about the structure and physicochemical properties of rhenium, its alloys and compounds, and to determine the application of rhenium in industry.

TABLE OF CONTENTS:

Card 1/5 UDC: 669.84+669.845

L 27228-66
ACC NR. AM6003227

Card 2/5

L 27228-66

ACC NR: AM6003227

Card 3/5